CVP-SWP Operations Delta Smelt Fall Habitat
Adaptive Management Program
June 2009 Fact Sheet
U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service's (Service) Biological Opinion (BO) for the California Central Valley and State Water Project Operations (OCAP) included 5 components of a Reasonable and Prudent Alternative (RPA) to avoid jeopardy to the and adverse modification to critical habitat of delta smelt (*Hypomesus transpacificus*), a small pelagic fish endemic to the San Francisco estuary. RPA component 3 restored flow variability to the estuary during the fall (September through November) to improve habitat conditions for rearing juveniles. The performance metric for this measure is based on X2 (a descriptor for the position in the estuary of the 2 part per thousand isohaline) during above normal and wet water years.

Delta smelt abundance has historically varied with flow conditions (variability, habitat area, habitat quality, etc.). Published (peer-reviewed) science provides explanations for how changes in flow conditions degraded habitat conditions available to rearing delta smelt. The Service believes that this science is sufficient to warrant an explicit fall action to preclude jeopardy. The Service acknowledges, however, that the specific mechanistic link(s) relating variability in fall X2 to variability in survival and recruitment of delta smelt are not fully understood. To address this uncertainty, a scientifically-based adaptive management process was established, and a ten-year adaptive management program initiated. This program includes a study that is being crafted by a team of agency and academic scientists with specific expertise in the ecology of the San Francisco estuary, the Habitat Study Group (HSG).

The HSG is an independent subgroup of the Pelagic Organism Decline (POD) team within the Interagency Ecological Program (IEP). The POD team constructs study plans to investigate the decline of several pelagic fishes in the San Francisco estuary and synthesizes results. The HSG is unique in that it was created in accordance with the biological opinion for OCAP and addresses effects that manifest in the fall, which could be affected by changes in X2. The HSG closely coordinates its efforts with the POD management team; while maintaining supervision by the Service (in coordination with the Bureau of Reclamation) to ensure compliance with the components enacted within the biological opinion.

The HSG will focus on X2 (flow) and its effects on recruitment (growth, fitness, and survival) of juvenile delta smelt. These effects may be direct or indirect, and all elements or interactions are relevant to the domain of the HSG study. The HSG study will be integrated with the broader IEP-POD investigations and clearly follow the charge prescribed in the biological opinion. POD elements focusing on drivers other than flow and on other fish will complement and contextualize the HSG study. Members of the HSG are free to share all information relevant to group discussions, scientific questions, data, models, monitoring issues, etc. with the POD team on an as-needed basis.

It is important to note that the HSG is not intended to be a forum for debate regarding the utility of a fall action beyond elements of the studies or hypotheses being tested. The importance of habitat quantity and quality in the fall season for rearing juvenile delta smelt as it pertains to flows has been resolved to the standard of evidence required for ESA purposes, and these are elaborated in the BO.

Alternative approaches to meet the intent of the action are allowed within the BO, however the approach, support and justification for such alternatives must be clearly articulated and thoroughly vetted before such alternatives reach the standard required to supplant the current prescription within the BO. The Service believes the state of the science strongly supports the current action and that significant progress will be needed before alternatives can be justified. This reality is the basis for the adaptive management of the action. While the adaptive management of the study is a purely technical process, the adaptive management of the action has a clear regulatory basis. The Service is providing support to the HSG in terms of facilitation and guidance to ensure that the adaptive management process is consistent with the requirements of the biological opinion.

The Service will work to keep the HSG consistent with the terms of the BO and provide assistance in facilitation and coordination., Technical direction for the group is handled through the action agency (U.S. Bureau of Reclamation). The HSG comprises seven Federal and State agencies entrusted with management of Delta habitat quality and is augmented with members from academia with specific expertise in estuarine community ecology. The HSG is currently drafting a Work Plan that will be independently peer-reviewed through the CALFED Bay Delta Program's Science Program in September 2009. Technical input from public stakeholders, agency scientists, and the research community at large is solicited and will be considered during the crafting of this Plan. The HSG has been actively meeting during 2009 and is posting notes to the Service webpage at http://www.fws.gov/sacramento/Habitat_Study_Group.htm. The framework document for the HSG, containing more detailed information about the action, adaptive management process, and organization of the study also appears at this site. A public meeting is scheduled for June 18, 2009 in the CALFED Delta Room, 650 Capitol Mall, Sacramento, to present the conceptual model for the study and a draft conceptual Work Plan with examples of study questions and approaches.